# V5 X Series

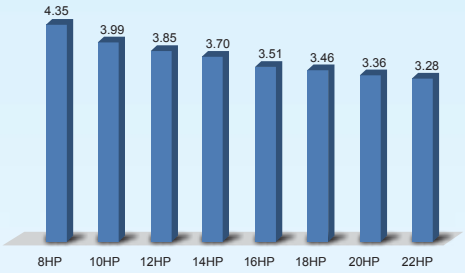
## All DC Inverter VRF

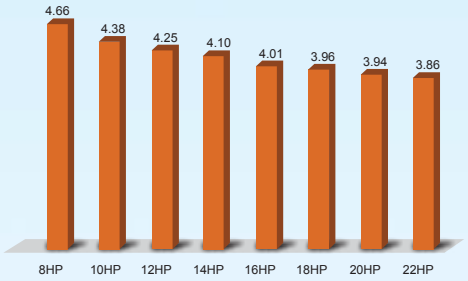
Climate Solutions for Green Environments

# High Efficiency

## High EER and COP values

V5 X Series achieves the industry's top class energy efficiency of cooling and heating by utilizing DC compressor control, DC Fan motor, and improved performance heat exchanger.



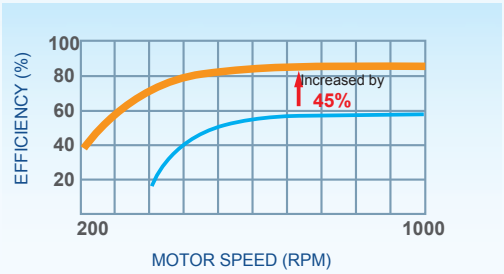

## DC inverter compressor

V5 X series adopts all DC inverter compressors

- High pressure chamber, more compact structure
- Refrigerant be compressed directly, more efficiency
- Preheating the oil make more suitable temperature

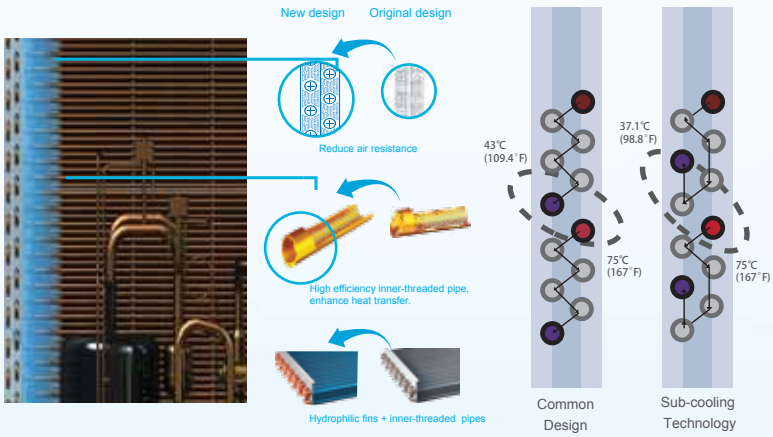
## DC fan motor

According to the running load and system pressure, the system control the speed of DC fan motor to match the compressor output , reduce power consumption about 45% especially at low load.




## High performance heat exchanger

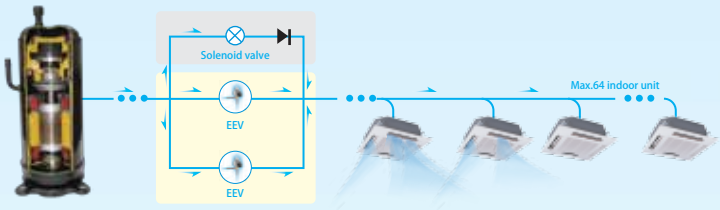
- The new designed window fins enlarge the heat-exchanging area , decrease the air resistance, hydrophilic fins and inner-threaded copper pipes optimize heat exchange efficiency.
- When the outdoor temperature is 35°C(95°F) , the refrigerant can be cooled down to 37.1°C(98.8°F) , thus achieving high heat-exchanging efficiency with only 2.1°C(3.8°F) temperature difference.



# High Reliability

## Multi solenoid valves control technology

- Double EEV and liquid side by pass solenoid valve in one system, each EEV part achieves 480 pulse to adjust flow precisely, total 960 pulse.



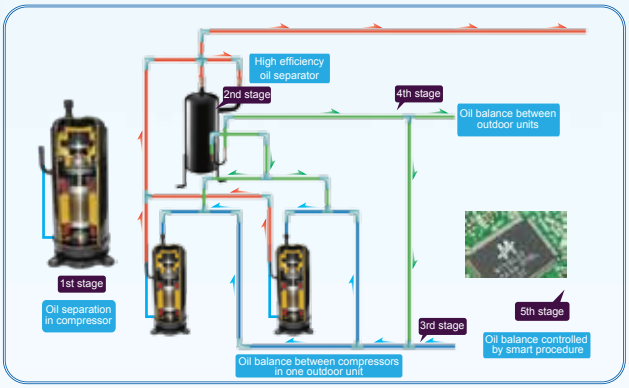

- All the solenoid valves equipped in the unit ensure temperature-control precisely, system running steadily and economically to provide a comfortable environment.

## Refrigerant pressure control technology

- The pressure sensor can monitor the high pressure of the system and send it to the mainboard all the time.
- The system controls the speed of DC fan motor according to the load and the high pressure, so that the pressure can be regulated precisely.
- The system can operate in the best pressure status under different working environment, the reliability will be higher and the lifespan of the system will be longer.

## High efficiency oil balance and oil return technology

- Oil balance pipes among modules and individual oil balance by vector control ensure even oil distribution among the modules which keeps compressors running normally.
- High efficiency centrifugal oil separator (separation efficiency up to 99%) makes oil separate from discharge gas and go back to compressors.
- Auto oil return program by monitoring the running time and state of system ensures reliable oil return.




## Various kinds of protect function

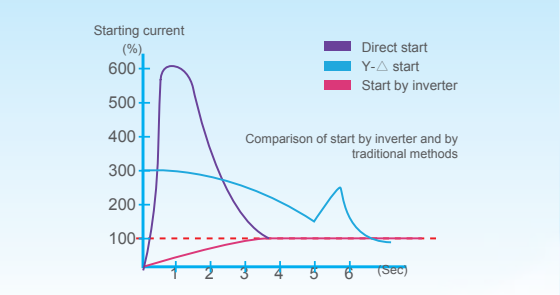
| | | | | |
|---|---|---|---|---|
| Ground protection | Phase sequence protection | Default phase protection | High-voltage protection | Low-voltage protection |
| Current protection | Fan motor Temp. protection | Compressor overload protection | Compressor Temp. protection | Pressure protection |

# Enhanced Comfort

## Intelligent soft start technology

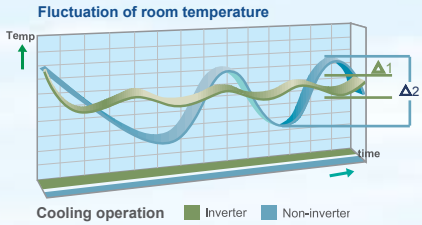
All DC inverter compressor and soft start function.

- Reduce strike to the electric network.
- High performance and low noise DC inverter compressor, operates at a faster rate when starting, reducing start-up time.
- It also helps the unit to quickly adjust the room temperature to the set level.



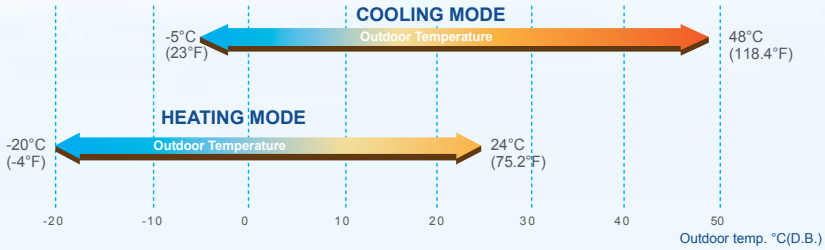

## Quick warm-up & cool-down design

By utilizing the benefits of all DC inverter compressor, the system can reach full load quickly and shorten the warm-up and cool-down times to provide an immediate and comfortable air solution. Less temperature fluctuation will create a better living environment.




## Wide operation range

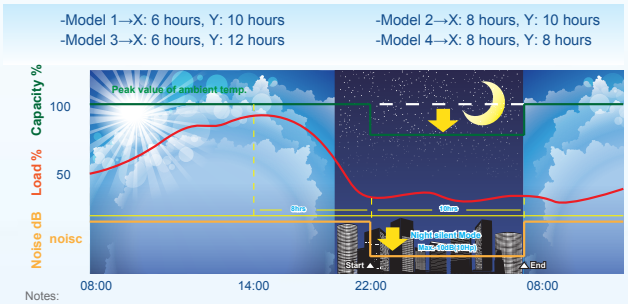
The V5 X series system can operates stably at extreme temperatures ranging from -20°C (-4 °F） to 48°C (118.4 °F） .




## Advanced silence technology

- Improved outlet grille and new shape fan blade decrease the running noise, and lower down airflow resistance and vibration.
- All DC inverter compressor, low operation noise. The newest noise enclosure for compressor.
- DC inverter fan motor, low noise and night silent function.

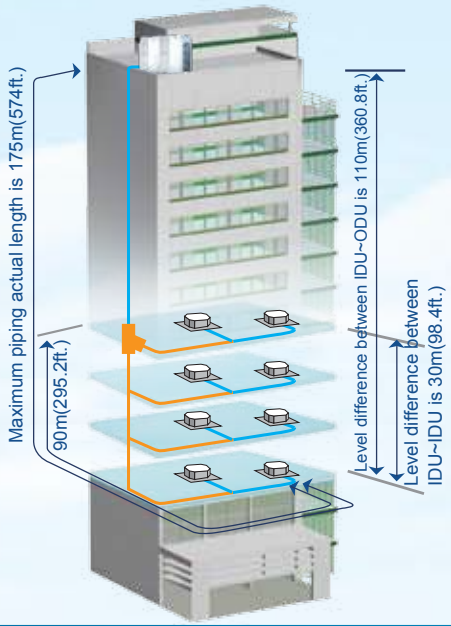
- MDV's Night Silent Mode feature which is easily set on the PCB board allows the unit to be set to varies time options during Non Peak and Peak operation time optimizing the units noise output. Extra silent operation mode can reduce sound level further, minimum 43dB (A).
- Night silent operation will be activated X hours after the peak temperature during daytime, and it will go back to normal operation after Y hours.




Notes:
This function can be activated by setting at site.
Temperature(load) curve shown in the graph is just an example.

# Flexible Installation and Easy Service

## Long piping length


Maximum piping actual length is 175m(574ft.)
90m(295.2ft.)
Level difference between IDU~ODU is 110m(360.8ft.)
Level difference between IDU~IDU is 30m(98.4ft.)

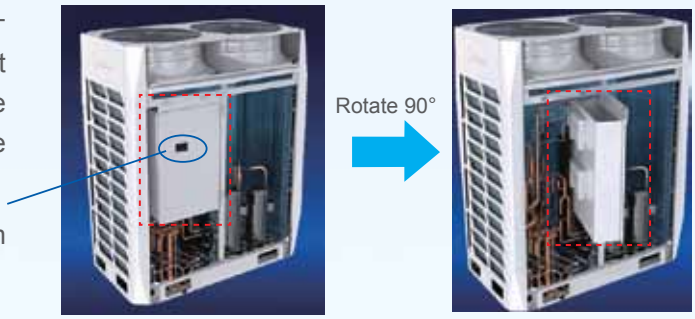
The solution supports an incredible piping length of 1,000m(3280ft.)and level difference of 110m(360.8ft.), making it perfect for large projects.

| | | | Permitted value | |
|---|---|---|---|---|
| | | | m | ft. |
| Piping length | Total pipe length*(Actual) | | 1000 | 3280 |
| | Maximum piping(L) | Actual length | 175 | 574 |
| | | Equivalent length | 200 | 656 |
| | Piping (From the first IDU branch to the farthest IDU ) equivalent length | | 40/90* | 131.2/295.2* |
| Level difference | Level difference between IDU~ODU | Outdoor unit up | 90 | 295.2 |
| | | Outdoor unit down | 110 | 360.8 |
| | Level difference between IDU~IDU | | 30 | 98.4 |

*Total pipe length is equal to two times — pipe length plus — pipe length.
*When the fastest pipe length is more than 40m(131.2ft.). It needs to meet the specific condition according to the installation part of the technical service manual.

## 90° rotatable electric box

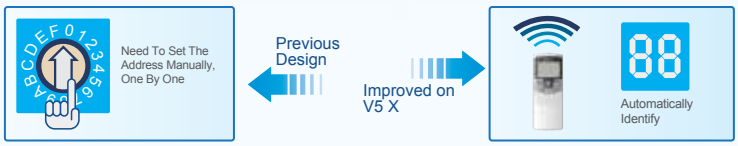
- The newly designed rotating control box is so excellent that it can rotate in a 90° angle. It is convenient for the inspection and maintenance of the pipeline system and greatly reduced the time of dismount the electric control box.
- Checking window for quick inspection of system status.




## Auto-test operation and Auto-addressing function

- Just simply press the test operation button, the unit will perform an automatic system check, including wiring, shutoff valves, and sensors. The results are returned automatically after the check finishes.

- The outdoor unit can automatically distribute the addresses to indoor units without any manual settings. Wireless controller can query and modify each indoor unit's address.




## Auto snow blowing function

During the winter, snow may accumulate and cover the outdoor units. These snow must be removed to ensure the units operating properly.
Snow prevention function can remove accumulated snow, so users won't have to get rid of it by themselves, makes the system more flexible for cold district.

# Smart Control System

## Newly designed touch-style key controller

Wired controller KJR-29B

- Remote signal receiving function
- Locking wired controller
- Air filter cleaning reminding

Centralized controller CCM30

- Centralized control
- Indoor units working status display
- Three lock modes
- Air filter cleaning reminding function

## Smart phone and pad controller

- Customers can use phone or pad to control the indoor unit with IOS or Android system, smart and convenient.
- Mode lock function.
- Indoor unit work status display.
- Advanced control and monitoring function, easy to check the working status of the outdoor unit.

Phone

Pad

## Central Control Software

IMM is designed specifically to control VRF systems, it can be used as a flexible multi-purpose system and applied to a variety of needs, according to the scale, purpose and control method of each building.

**IMM(Intelligent Manager of MDV)**

4th Generation Monitoring System

### Functions

- Up to 4 M-interfaces, 64 refrigerant systems, 1,024 indoor units and 256 outdoor units can be controlled by one PC.
- Web Access
- User friendly operation
- Central building monitoring and control
- Lock control (individual controllers
- Set temperature limit
- Proportional power distribution
- Annual schedule control
- Low-load operation indicate
- Generate operational history reports (daily, weekly, monthly)
- Fault display & Warning message
- Filter replacement reminder
- Emergency stop and Alarm signal output

## BMS gateway

MD-CCM08

**BACnet® BMS Gateway**

Contains 4 groups of RS-485 communication ports and be able to connect up to 256 indoor units or 128 outdoor units to the BMS.

MD-LonGW64

**Lonworks® BMS Gateway**

The Lonworks can connect up to 64 indoor units to the BMS, it realizes non-polarity communication, and also the application can be down-load online.

GateWay01/E

**Modbus BMS Gateway**

Supports Modbus protocol networks.
Bridges the MDV central A/C system and the BMS.
Establishes a Modbus network comprising up to 1,024 indoor units and 64 outdoor units.
Transfers data in RTU mode.
Provides a wide voltage range:12-48V DC

# Outdoor Unit Lineup

The outdoor units' capacity range from 8HP up to 88HP in 2HP increment. Maximum 64 indoor units with capacity up to 130% of total outdoor units can be connected as one refrigeration system.

**8,10,12HP**

**14,16,18,20,22HP**

**24,26,28,30,32,34,36,38,40,42,44HP**

**46,48,50,52,54,56,58,60,62,64,66HP**

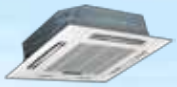
**68,70,72,74,76,78,80,82,84,86,88HP**

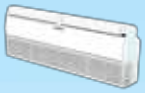
| Model | | | MV5-X252W/V2GN1 | MV5-X280W/V2GN1 | MV5-X335W/V2GN1 | MV5-X400W/V2GN1 |
|---|---|---|---|---|---|---|
| Power source | | V-Ph-Hz | 380~415V 3N 50Hz/60Hz | | | |
| Cooling mode | Capacity(Nominal) | kW(kBtu/h) | 25.2(86.0) | 28.0(95.5) | 33.5(114.3) | 40.0(136.5) |
| | Power input | kW | 5.79 | 7.02 | 8.71 | 10.81 |
| | EER | kW/kW | 4.35 | 3.99 | 3.85 | 3.70 |
| Heating mode | Capacity(Nominal) | kW(kBtu/h) | 27.0(92.1) | 31.5(107.5) | 37.5(128.0) | 45.0(153.5) |
| | Power input | kW | 5.79 | 7.19 | 8.82 | 10.98 |
| | COP | kW/kW | 4.66 | 4.38 | 4.25 | 4.10 |
| Fan motor | | | 1DC fan motor | | | 2DC fan motor |
| Sound pressure level | | dB(A) | 43~58 | 43~59 | 43~60 | 43~62 |
| Max.quantity of indoor units | | | 13 | 16 | 20 | 23 |
| Refrigerant piping diameter* | Liquid/Gas pipe | in.(mm) | Φ3/8/Φ7/8(Φ9.53/Φ22.2) | | Φ1/2/Φ1(Φ12.7/Φ25.4) | Φ1/2/Φ1-1/8(Φ12.7/Φ28.6) |
| Net dimension | W×H×D | in.(mm) | 39×64-3/8×31-1/8 (990×1635×790) | | | 52-3/4×64-3/8×31-1/8 (1340×1635×790) |
| Net weight | | lbs(kg) | 483(219) | 483(219) | 523(237) | 655(297) |

| Model | | | MV5-X450W/V2GN1 | MV5-X500W/V2GN1 | MV5-X560W/V2GN1 | MV5-X615W/V2GN1 |
|---|---|---|---|---|---|---|
| Power source | | V-Ph-Hz | 380~415V 3N 50Hz/60Hz | | | |
| Cooling mode | Capacity(Nominal) | kW(kBtu/h) | 45.0(153.5) | 50.0(170.6) | 56.0(191.1) | 61.5(209.8) |
| | Power input | kW | 12.83 | 14.47 | 16.67 | 18.77 |
| | EER | kW/kW | 3.51 | 3.46 | 3.36 | 3.28 |
| Heating mode | Capacity(Nominal) | kW(kBtu/h) | 50.0(170.6) | 56.0(191.1) | 63.0(214.9) | 69.0(235.4) |
| | Power input | kW | 12.47 | 14.15 | 15.98 | 17.86 |
| | COP | kW/kW | 4.01 | 3.96 | 3.94 | 3.86 |
| Fan motor | | | 2DC fan motor | | | |
| Sound pressure level | | dB(A) | 43~62 | 43~63 | 43~63 | 43~63 |
| Max.quantity of indoor units | | | 26 | 29 | 33 | 36 |
| Refrigerant piping diameter* | Liquid/Gas pipe | in.(mm) | Φ1/2/Φ1-1/8(Φ12.7/Φ28.6) | Φ5/8/Φ1-1/8(Φ15.9/Φ28.6) | | |
| Net dimension | W×H×D | in.(mm) | 52-3/4×64-3/8×31-1/8 (1340×1635×790) | | | |
| Net weight | | lbs(kg) | 655(297) | 673(305) | 750(340) | 750(340) |

*Refrigerant piping diameter here only for when the total equivalent length<90m;for the data when total equivalent length≥90 please refer to technical manual.
Due to continuous improvement,specifications are subject to change without prior notice.

# Indoor Unit Lineup

| Type | Appearance | Capacity range (kW) | Quantity of models |
|---|---|---|---|
| One-way cassette | | 1.8~5.6 (50/60Hz) | 6 |
| Two-way cassette | | 2.2~7.1 (50/60Hz) | 6 |
| Compact four-way cassette | | 2.2~4.5 (50/60Hz) | 4 |
| Four-way cassette |  | 2.8~14.0 (50/60Hz) | 10 |
| Low static pressure duct | | 1.8~5.6 (50/60Hz) | 6 |
| Middle static pressure duct (A5 duct) | | 2.2~14.0 (50/60Hz) | 10 |
| High static pressure duct | | 7.1~11.2 (50/60Hz) | 4 |
| | | 14.0~16.0 (50/60Hz) | 2 |
| | | 20.0~28.0 (50Hz) | 3 |
| | | 40.0~56.0(50Hz)<br>40.0~45.0(60Hz) | 3<br>2 |

| Type | Appearance | Capacity range (kW) | Quantity of models |
|---|---|---|---|
| Ceiling &floor |  | 3.6~16.0 (50/60Hz) | 9 |
| Wall-mounted D type | | 2.2~7.1 (50/60Hz) | 6 |
| Wall-mounted S type | | 2.2~5.6 (50/60Hz) | 5 |
| Wall-mounted C type | | 2.2~5.6 (50/60Hz) | 5 |
| Wall-mounted R type | | 7.1~9.0 (50/60Hz) | 3 |
| Floor standing | | 2.2~8.0 (50Hz) | 7 |
| | | 2.2~8.0 (50Hz) | 7 |
| Console | | 2.2~4.5 (50/60Hz) | 4 |
| Fresh air processing unit | | 12.5~14.0 | 2 |
| | | 20.0~28.0 (50/60Hz) | 3 |

GD Midea Heating & Ventilating Equipment Co., Ltd.
Is certified under the ISO 14001 International standard for environmental management.
Certificate No.15912E10020R0L

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NO.01 100 019209

GD Midea Heating & Ventilating Equipment Co., Ltd.
Certificate of Occupational Health and Safety Management System
Certificate No. 15912S20006R0L-1.